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THE  
Agricultural and Mineral Resources  
OF  
MUSKINGUM COUNTY, OHIO,  
AND THE  
**ADVANTAGES OF ZANESVILLE,**  
(ITS CAPITAL TOWN,)  
AS A  
PLACE FOR RESIDENCE AND BUSINESS,  
AND AS A  
Commercial and Manufacturing City.

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Zanesville, O.  
Prepared by direction of the Board of Trade.

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ZANESVILLE, OHIO:  
NEWMAN & DODD PRINTERS, DAILY COURIER JOB OFFICE, NO. 133 MAIN STREET.  
1874.



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## P R E F A C E .

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This Pamphlet has been prepared at the instance of "the Board of Trade," of Zanesville, Ohio, a citizens' association, organized for the purpose of fostering, protecting and advancing, the manufacturing and commercial interests of the city and vicinity. Its purpose is to present a statement of the agricultural and mineral resources of Muskingum County, with some account of the advantages, capabilities, commercial and manufacturing interests, rail road and water facilities, prospects and attractions, etc., etc., of Zanesville, its capital town. The effort has been to furnish information fully and entirely reliable. The public may rest assured that any statement herein contained can be depended upon. All exaggerated accounts of the resources of the County, and the advantages of the city for trade and the employment of capital, have been carefully avoided. Each citizen is supposed to possess a certain degree of pride in the place of his nativity or adoption, and this is pardonable ;—it is, indeed, praiseworthy ; but this should not exist to an extent to mislead strangers, or give a coloring not warranted by facts. The want of correct information on the part of capitalists seeking investments, or persons on the lookout for new homes, is a matter of no small consequence. It is a matter of remark, too, that, in respect to this community, such information has not hitherto been furnished, and it exhibits, on the part of its citizens, a neglect of duty in not making known, in a proper manner, the advantages for the employment of capital and skilled labor, and the attractions for residence, which here exist. A generous criticism of the matter contained in the following pages is demanded, and if the information furnished shall



cause any citizen, particularly those who are just engaging in business pursuits, to feel that in the scuffle of life the home he now has, all things considered, may be as advantageous and attractive as can be afforded in any other locality, or be the means of directing hither the footsteps of any one seeking a place for residence, or business, or the investment of capital, or all these combined, the purpose for which this Pamphlet has been prepared is accomplished. Its aim, further than this, is unpretentious—the subject might have been elaborated into a volume, but enough is presented to meet the demands of the inquiring.

The attention of capitalists and manufacturers is particularly invited to the chapters on the minerals of Muskingum County, and also to the chapters on Zanesville as a manufacturing and as a commercial city.

# PART I.

## MUSKINGUM COUNTY.

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### CHAPTER I.

PRELIMINARY SKETCH—GEOGRAPHICAL POSITION—AREA—POPULATION—  
PRINCIPAL TOWNS—SURFACE—WATER DRAINAGE—PHYSICAL FEATURES.

*Preliminary Sketch.*—The act of the General Assembly of Ohio, creating the county of Muskingum, bears date March 1, 1804, one year and three months after the formation of the first Constitution of the State. The county was carved out of territory which, prior to the above date, was a part of the Counties of Fairfield and Washington. Muskingum included in its original limits what is now Coshocton, and portions of Holmes, Tuscarawas, Guernsey, Perry and Morgan Counties. Muskingum is an Indian word, and its meaning is somewhat in doubt. One legend has it that the word means an "Elk's Eye," or "the glare of an Elk's Eye," while another defines the word "a town on the river side." The County is named after the river which passes through it. Muskingum, it will be seen, is one of the oldest Counties in Ohio, almost as old as the State itself, but its history, further than this preliminary sketch, is foreign to the present purpose.

*Geographical Position.*—Muskingum County is situated in the South eastern section of Ohio. The line of the 40th parallel of North Latitude passes about midway across the County. It is also situated in almost the middle of the coal producing Counties of the State, numbering some twenty-five in number, and constituting a belt or section bounded on the South-east by the Ohio river, and having for their upper margin the Counties of Lawrence, Jackson, Vinton, Hocking, Perry, Muskingum, Coshocton, Holmes, Stark and Mahoning, occupying a space of about one hundred and eighty miles in length by eighty in breadth. The County is, in shape, almost a square, its mean extent from North to South being about twenty.

seven miles, and from East to West about twenty five miles. It contains, in all, twenty-five Townships, though several of these are quite small, and only some half dozen correspond in boundary with the original Townships as surveyed under authority of the general government.

*Area, Population and Chief Towns.*—In area, Muskingum is the fourth County of the State, the larger Counties, including Muskingum, ranking in area as follows :

Ashtabula.....	439,386	acres.
Licking.....	427,315	"
Ross.....	419,442	"
Muskingum.....	417,264	"

The number of acres in each of the above Counties is exclusive of territory embraced in cities, incorporated villages and towns. In population, according to the census of 1870, Muskingum ranks as the seventh in the State, the more populous Counties; including Muskingum, ranking as follows :

Hamilton, including Cincinnati.....	260,370
Cuyahoga " Cleveland.....	132,010
Montgomery " Dayton .....	64,006
Franklin " Columbus.....	63,119
Stark " Canton and Massilon.....	52,508
Lucas " Toledo .....	46,722
Muskingum " Zanesville.....	44,886

The foregoing cities are cities of the first or second class as organized under the laws of Ohio.

The municipalities of Muskingum County are, Zanesville with city charter, and the incorporated villages of Dresden, New Concord, Frazeysburg, Taylorsville, Uniontown, Adamsville and Roseville, and the unincorporated towns of Norwich, Otsego, Bloomfield, Chandlersville, Rix Mills, Duncan's Falls, Lytlesburg, Mount Sterling, Gratiot, Irville, Nashport, and a few other places of less importance.

*Water Drainage and Surface.*—The County is divided into two nearly equal parts by the Muskingum river, which enters the County about midway of the Northern boundary, extending in an almost southerly direction and leaving the County about midway of its Southern boundary. That portion of the County West of the Muskingum river is again about equally divided by Licking river, a tributary of the Muskingum, and entering the latter river at Zanesville. The Northern section of the County, West of the Muskingum, is drained by the Wakatomaka, which enters the Muskingum near Dresden, sixteen miles above Zanesville, and the South-western section of the

County by Moxahala and Jonathan's Creeks, which unite before entering the Muskingum, and Brush Creek. The Eastern part of the County is drained by Salt Creek and Symm's Creek and their tributaries. The above are the principal streams in the County, and all afford numerous sites for mills and manufactures.

The surface of that section of the County East of the Muskingum river is, for the most part, uneven and portions of it quite hilly, though none mountainous. The hills rarely rise more than two hundred and fifty feet above the water courses; their summits are generally rounded, and no portion of the surface is broken to such an extent as to render it in any degree unavailable for purposes of agriculture. A very considerable portion of the County West of the Muskingum river is comparatively level, and the remainder, for the most part, undulating. The natural drainage of the surface of the entire County may be said to be perfect; lakes, swamps and waterfalls are unknown, and the supply of water is of the purest character, and never failing springs are found on every farm. The scenery in all parts of the County is most picturesque and beautiful, presenting a variety not surpassed in any like extent of territory in the State. The views from some of the more elevated lands are grand and impressive. High Hill, situated in the eastern section of the County, has frequently been visited by tourists for the purpose of obtaining the view from its summit, the range of vision extending in all directions from twenty to fifty miles, and taking in a variety of scenery of wood and farm land scarce any where excelled. The County possesses, perhaps, as great a variety of surface adapted to agriculture as can be found in any scope of country of like extent in the Northern States, and the soil is such as to give easy and cheap adaptation to variety and rotation of crops, rendering farming on a small scale productive and profitable, and thus securing a dense farming population.

The physical features of the County and its agricultural capacity are very nearly connected with the various rock formations that underlie its surface. The soil may be said to be, in a good measure, dependent on the rocks for its constitution, and it can be readily understood that a presentation of all the geographical and agricultural features of the County would invite a geological examination. In these respects it is in striking contrast with the Counties of the State more westerly situated where the rocky floor of the country is so deeply covered with the beds of drift as to be removed from any but the most general influence on the surface. The County generally slopes to the South and South-east, and consequently the drainage is to the Ohio river.

## CHAPTER II.

## CHARACTER OF SOIL—TIMBER—FARMING—ORCHARDS AND FRUITS.

*Soil.*—The soil of the river bottoms, the creeks and smaller streams and of the valleys, consists of a deep, alluvial deposit. In productiveness it is rarely surpassed. The valleys of the Muskingum and Licking rivers are equal in fertility to any in the State.\* In the more uneven sections of the County gray limestone is found in abundance, and exists on the summits of the highest hills. This limestone, on exposure, changes to a yellow or cream like color, becomes soft and friable, is quite soluble under atmospheric agencies, and hence is valuable for its fertilizing influences on the soil, imparting to it a productiveness quite equal to that of the valleys. There are no barren surfaces or waste lands in any portion of the county. The clay lands, as they are called, though not as fertile as the valleys or those sections where the limestone abounds, are rendered porous and open by the addition of sand mingled with the clay, and amply reward the husbandman for his toil and industry. Many of the most successful farmers of the County cultivate exclusively these clay lands.

*Timber.*—The forests which originally covered the territory of Muskingum County were very dense, and the trees of the largest growth. Nearly all the varieties of timber known to the forests of this latitude were here found. Here were numerous varieties of oak and hickory, yellow and white poplar, black and white walnut, the ash, maple, sugar tree, beech, sycamore, chestnut, buckeye, wild cherry, common and slippery elm, gum, honey and common locust and dogwood. These varieties constitute the principal forest timber. The wild plum, crab and thorn apple, persimmon, june or service berry, wild grape, and other varieties of wild fruits are abundant. About one-third of the entire area of the County still remains wood or timber land, and among the still existing timber can be found all the varieties above named.

*Farming and Farm Products.*—The farming of Muskingum County is what is denominated mixed husbandry. The farms are generally small, there being few extensive land owners in the County. Tenantry exists only to a very limited extent. The consequence is the largest product of the field in stock, cereals, vegetables and fruits is secured. All the vegetables, grains and fruits of the climate are here produced. In the vicinity of Zanesville the lands are

\* In the production of corn in 1873, according to the Report of the Commissioner of Statistics of Ohio, 1873, the general average of the Muskingum Valley is greater than that of any other valley of Ohio except one.

chiefly devoted to gardening and farming on a small scale. More remotely from the centre, stock raising and farming in the usual acceptation of the term are followed, and considerable portions of the land is given up to timothy and red clover. Muskingum is one of the largest sheep growing Counties in the State, in fact among the most extensive in the United States. Cattle of the Devon and Durham breeds here raised have taken numerous first premiums at the Ohio State Fairs and at various County Fairs of this and adjoining Counties. During the last few years increased attention has been given to the raising and cultivation of the best breeds of horses, and at the present time, both for the turf and the road, Muskingum County boasts a class of horses among the finest blood of any in the United States. In this particular no expense has been spared, and wherever throughout the Union a horse possessing superior qualities has been known his stock is here found. In horse raising, though not conducted on as extensive a scale as in some other sections, Muskingum County, at this time, in the quality of the stock raised, scarce ranks inferior to any County of the State, and the interest taken in this branch of industry is a constantly growing one. There cannot be a doubt but that all the conditions of soil, water and climate, are here abundantly supplied for stock raising, and every farmer who is engaged in the business realizes a good profit on his labor and investment.

*Fruit.*—Orchards are abundant. There is scarcely a farmer who makes any pretensions in the line of his business who has not set apart a few acres for the production of fruit. The soil is admirably adapted to the cultivation of every variety of fruit grown in this climate. Especially is this true of the more elevated limestone lands. Apples rarely fail, especially in producing a supply sufficient for the home demand, and for beauty, size and flavor, for the perfection of the fruit generally, the products of Muskingum County orchards have received the highest award of merit. All the varieties adapted to the climate are found. Peaches on the most elevated grounds attain great beauty and perfection. Grape culture is most successful. Numerous vineyards have been planted, and every land owner cultivates for the family supply. The Concord, on account of its hardy and prolific character and the fact that it never fails, is the most popular variety, but the Hartford Prolific, Delaware, Clinton, and many other varieties, seem to flourish equally well with the Concord. Pears, plums, cherries, gooseberries, raspberries and strawberries, are all cultivated with marked success, and the supply is not only sufficient for the home demand, but large quantities are, every season, shipped to neighboring towns and villages. At the

State Horticultural Fair of 1872 there was seen the finest collection of fruits ever exhibited in Ohio, and of those fruits Muskingum County received the first premium.

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### CHAPTER III.

MINERAL RESOURCES—COAL—IRON ORE—LIMESTONE—BUILDING STONE—POTTERS' CLAY—BUHR STONE—GYPSUM—KAOLIN—SALT—PETROLEUM—OTHER MINERALS.

*Mineral Resources.*—It is in mineral resources that Muskingum County ranks pre-eminent. The developments which have been and are daily being made by a geological examination of this section of the State demonstrate that it is among the richest in the world in coal, iron ore, and other valuable minerals.\*

The proximity of these minerals to each other, and the facility with which they can be mined, must have the effect in due time, to induce the investment in this vicinity of a large amount of capital in furnaces, iron-mills, foundries, and other iron manufactures, and the concentration of a dense manufacturing population, the channels of commerce, natural and artificial, admitting as they do of a direct, ready and cheap transportation to all sections of the country. Regarded in this point of view, as a permanent source of wealth, an inquiry into the range, quality and extent, of the mineral deposits here found would become an interesting subject of examination. But to do this would be to write a treatise on geology. That is foreign to the present purpose. Space only permits a very

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\* The following extract from the Report of the Commissioner of Statistics of Ohio, 1873, indicates somewhat the extent of the coal fields of Ohio :

"The coal area of the State is 6,500,000 acres. The average aggregate thickness of the available seams is 20 feet. (The State geologists say this is a low estimate.) There are 27 cubic feet to the ton. This gives 209,733,333,340 tons for the State. At the rate the mines of the State now yield, this amount would not be exhausted in 51,200 years, or would stand the present draft on all the mines of the United States for 4,560 years; or, with a yearly product equal to that of the mines of Great Britain, it would last 1,600 years.

The counties wholly covered with coal are Mahoning, Columbiana, Stark, Holmes, Tuscarawas, Carroll, Jefferson, Harrison, Belmont, Guernsey, Coshocton, Muskingum, Perry, Noble, Morgan, Monroe, Washington, Athens, Meigs, Gallia, Lawrence, and nearly all of Jackson. All the counties of which the eastern or south-eastern parts only are covered with coal, are Trumbull, Portage, Summit, Medina, Wayne, Licking, Fairfield, Hocking, Vinton and Scioto."

brief mention of the principal minerals which here abound. In confirmation of the statements herein contained, reference is had to the official reports on the Geology of Ohio made to the General Assembly of the State in 1837, and the several reports made by the present Board of State Geologists.

*General Location.*—Muskingum County, as has been stated, is situated on the western margin of the great Alleghany coal field, and consequently borders the vast coalless district which extends over two-thirds of Ohio, and all of the State of Indiana, except its western and south-western border. Northern Illinois, Wisconsin, Michigan and Western Canada, are also largely dependent for coal, which must be obtained from this and adjoining Counties. This coalless district contains already many large cities, such as Cleveland, Toledo, Detroit, Chicago, Indianapolis, Dayton, Columbus and Cincinnati, and numerous smaller ones, all rapidly growing, and dependent in a great measure for their supplies of coal from this and other counties in its immediate vicinity. The central position of Muskingum County in this coal region and the advantages it possesses in the way of rail-road transportation, must enable it in due time to command the market of a very wide range of country. It is nearer the Lake Cities than any other point to which the Lake Cities can look for their coal supply, and being on the border of the vast level country which stretches to the west and north-west, the rail-roads which must transport its coal have comparatively light grades and consequently carry heavy freights at the least expense. These general advantages of location cannot be regarded otherwise than of very great importance.

*Coal.*—There is not a township in Muskingum County in which workable coal beds are not found. Within the County are *seven separate and distinct coal strata, each varying from three to seven feet in thickness, besides ten or twelve additional seams, a portion of which are also workable, but generally are so thin as to be, at this time, of little economical value, making an average aggregate thickness of over forty feet of available coal seams.* The report of the State Geologist on the geology of Muskingum County, (see Geological Survey of Ohio, Vol. I., 1873.) says, that “*within the limits of this County there is found, in thicker or thinner developments, a representative of nearly every important coal seam in the coal measures of South-eastern Ohio.*” While the coal area of Muskingum County is, therefore, greater than that of any other County of the State, this coal, lying in accessible seams in the hill sides, is readily drained and easily and cheaply mined, (shafting will for long years be here unknown,) and constitutes nearly every variety employed in the numerous and



economical purposes of life. As indicating the quantity and extent of the coal measures here existing the following extract from the report of the State Geologist, J. W. Foster, author of "Pre-Historic Races of North America," may be pertinent in this connexion.—(see Geological Report of Ohio, 1837, page 87.) He says: "Here " then, is fossil fuel embraced in one County sufficient to supply the " people for ages. Should the consumption of coal become " proportionately as great as in England, there is sufficient in this " County alone to supply the population of our State with fuel for " two hundred and fifty years."

Prof. Mather, President of the first State Geological Board of Ohio, in his report to the General Assembly in 1837, speaking of the coal formations of this section of Ohio, says :

" Along a section from the base of the series at Brownsville, " fourteen miles west of Zanesville, to Marietta, at the mouth of the " Muskingum, in a thickness of 800 feet, are eight workable seams " of coal." He also says, in another place in the same report : " The number of workable beds of coal in the coal fields of Ohio " are found to be greater than in Pennsylvania or Virginia, and in " the same vertical thickness much greater than in the coal fields of " England."

Another writer, alluding to these estimates of the coal of Muskingum County, says :

" Large as these estimates seem they are but a small part of the " vast aggregate. The county of Perry, adjoining Muskingum, is " even more full of coal and iron. Along the line of the Cincinnati " and Zanesville Railroad, (now the Cincinnati and Muskingum " Valley Rail Road,) are immense coal deposits, from which large " quantities are sent to Cincinnati, and about seven miles south of " this road are the finest coal strata in the country, if not in the " world, being from six to twelve feet thick. This region also " abounds in the most valuable iron ore, known as the brown and " red hematites."

The coal strata of Perry County alluded to in the foregoing extract are found in the Southern portion of that County, immediately adjoining the south-western section of Muskingum County, and extend into the latter County. The more recent geological explorations of this County indicate a very much greater quantity of coal existing within its limits than has heretofore been supposed or was estimated by State Geologist Foster in the report above quoted, but no recent estimates of the amount of this coal have been made.

Many of the varieties of the Muskingum County coal are of a

superior quality, but space only permits a very brief note on this subject. The State Geologist in the report of the coals of this County first above quoted (see Vol. I, Geological Survey of Ohio, 1873,) says : " There appears to be almost every possible gradation between the driest or non-caking coals and those which soften and swell in burning and are in the highest degree caking in quality."

The coal from the seam known as the three and one-half foot vein has been used in the manufacture of coke to a considerable extent, producing an article strong and solid, adapted to the manufacture of iron and the various other purposes for which coke is employed. As a gas making coal it is considered superior, and but for the fact it contains a small quantity of bi-sulphide of iron (which, however, on account of its weight is easily washed out,) would stand at the head of gas-making coals. This may be seen from the following analysis of samples of this coal taken through the entire seam, and which analysis is about an average of this entire coal vein :

	Upper 2 feet of seam.		Lower 16 inches.	
Water .....	5.60		5.20	
Fixed Carbon.....	53.05		51.80	
Volatile Matter .....	38.80		37.80	
Drab Ash.....	2.55		5.20	
Sulphur.....	.76		1.75	

There is also a seam of dry burning coal, as it is called, non-caking, above this three and one-half foot vein, the thickness of the seam varying from three to seven feet, and covering almost the entire eastern section of the County. Its greatest thickness is in the immediate vicinity of Zanesville.\* This coal for the most part is of a quality enabling it to be used for smelting purposes, but its character can best be judged from the following analysis of several samples, all taken from different openings :

Water .....	6.15	6.55	5.80	6.23	6.28
Ash .....	4.41	4.20	4.60	4.33	3.82
Volatile Matter..	30.97	31.66	31.00	30.28	30.52
Fixed Carbon...	58.47	58.59	58.60	59.16	59.38
Sulphur.....	.41	.52	.35	.28	.37

In speaking of these dry coals Prof. Andrews, State Geologist, says : " The analysis shows this to be a very superior coal. The

\* " Col. Foster gives a seam of coal six feet thick under the lime stone in the bed of the Muskingum River at Zanesville." " It is singular," says Prof. Andrews, " that so thick a seam should never have been carefully explored." The reason why it has not hitherto been explored is probably because the hills that surround Zanesville have furnished such a supply of coal above the River bed as to render it unnecessary to seek coal by shafting.

fixed carbon is large and the sulphur small. So far as an analysis has been made this \* \* \* is one of the best coals of the State." And Col. Foster in speaking generally of these coals says : "It is of the finest quality, bituminous and cannel, and the bituminous is for the most part of a very dry quality, almost entirely free from slate, sulphur or other impurities, and is consequently fitted for the manufacture of iron."

The varieties of coal here found are, for the most part, the bituminous and the cannel coal. The former largely predominates, though there are considerable veins of the latter, the thickest being near three feet. Foster in speaking of these varieties says :

"Its (bituminous) color is black, its lustre resinous and not unfrequently pseudo—metallic. It breaks into trapezoidal blocks, and during combustion agglutinates, giving a bright yellow flame. The second variety resembles a dark shale, highly impregnated with bitumen. It differs in composition from the former variety, containing less bituminous and more earthy matter. It burns with a bright flame but does not agglutinate. Where the earthy matter predominates it passes into bituminous shale, and the transition is often observed in short distances."

As indicated above, the process of sinking shafts to obtain coal has never yet been introduced. There is no necessity for this. The County, and its immediate surroundings, North, East and South, is so abundantly supplied with this invaluable combustible that generations will come and go before that which exists above the water courses will become exhausted. No such thing as a coal famine will, at least for a century or more to come, disturb the repose of an inhabitant of Muskingum County, and the important part it is destined to play upon the happiness and prosperity of the community remains to be developed.

*Iron Ore.*—By an inspection of the geological map of Muskingum County accompanying the first volume of the Geological Survey of Ohio, 1873, it will be seen that there is hardly a hill in the southern half of the County that does not contain iron ore, and in very many instances this ore is found in workable seams. But the most valuable ore beds, both in extent and quality, are in the northern and north-eastern portions of the County, and which are not represented on the map from the fact that the seams have not yet been traced by the member of the Geological Board having this section of the County in charge. Consequently there is no recent estimate of the extent of the ore beds of this section of the County, and the quality of the ores is undetermined. Should the analysis when made demonstrate the ores of this section of the County to be equal in quality

to those of the Southern section, these ores must become, at no distant day, a source of great revenue to Muskingum County, as they can be delivered at the Zanesville furnace as cheaply as stone. Foster, quoted above, in speaking of the ore of this County, says : " The ore beds embracing the Western Townships of Muskingum, and the Eastern Townships of Licking County, occupy an area equal to two hundred square miles. " He also in the same report estimates the quantity of iron ore in Muskingum County, and says : " The ores are rich, yielding probably from thirty to sixty per cent. of iron and easily wrought, and number 153,600,000 square yards, and that each yard is capable of producing one ton of pig metal. " The Geological report of 1873, says : "*Ores of excellent quality are much more abundant in this County than was formerly supposed.*"

The analysis of these ores, as made by the present State chemist, ranges from thirty-two to fifty-two and one-half per cent. metallic iron.

The following is the analysis of a number of samples of ore furnished him by the State Geologist, selected from different neighborhoods in the County :

	Metallic Iron,	Phosphoric Acid.	Sulphur.
Hopewell Township.....	37.07 .....	Trace .....	Trace
do .....	52.51 .....	.38 .....	do
Falls Township .....	41.33 .....	.54 .....	do
Zanesville Corporation.....	36.44 .....	3.50 .....	.17
do .....	31.19 .....	.31 .....	.50
Springfield Township.....	47.15 .....	.29 .....	Trace

Prof. Andrews, before quoted, in an article contained in the Report of the Commissioner of Statistics of Ohio for 1871, in speaking generally of the iron ores of the Eastern District of Ohio, including Muskingum County, says : " The ores of the District are generally of great excellence and purity, and the iron made from them has a very high reputation. " These ores have as yet been mined only to a very limited extent.

*Limestone.*—The limestone of Muskingum County exceeds computation. There are here found twenty-two distinct and separate seams, and it is seen cropping out in almost every hill in the County.\* The color varies from a light gray to a deep blue. It is sub-crystal line in texture, and is found in strata varying from a few inches to five or six feet in thickness, some of the strata being separated from each other by a very thin layer of clay, or other mineral deposit. The blue limestone is, to a considerable extent, fossiliferous, but very durable, almost as much so as granite, admits of a high polish,

\* " A well dug in the village of Newtonville passed through fifteen feet of limestone. "—*Geological Report*, 1871.

and as a flux in the manufacture of iron is highly approved. As a "gas-lime" it is superior, as the following analysis demonstrates :

Carbonate of Lime.....	94.34
"          Magnesia.....	2.06
Silica and Sand.....	2.00
Illuminæ and Iron.....	1.60
	<hr/>
	100.00

The gray limestone every where abounds along the creeks and smaller streams, the hillsides and on the most elevated lands. Prof. Andrews says: "The limestone in the bed of Jonathan's Creek is the representative in the State of the lower carboniferous limestone of Illinois and Missouri, and is a deposit of very great scientific interest." It is also susceptible of a high polish, and has been used in the construction of jambs, pillars and other ornamental work. For purity, beauty and durability, these varieties of limestone have not their superior in the State, and in addition to their use in the arts and conversion into lime and employment for building purposes, they have been sought for various purposes on account of the high finish of which they admit.\*

*Building Stone.*—The hills of Muskingum County are filled with building stone of almost every variety and quality. The free and sand stones are durable and harden with age, as can be seen in numerous private and public structures in and about Zanesville.

\* James P. Egan, Esq., of Zanesville, Civil Engineer, at the instance of the County Commissioners of Muskingum County, recently made an examination of the limestone along the Cincinnati and Zanesville Railroad, in the western part of this County, with the view of ascertaining its quality for public structures, and whether the material was suitable for the new Court House about to be erected in Zanesville. From this report to the Commissioners the following extract is taken :

" This (Newtonville,) limestone covers a large portion of Newton Township, and ranges from fifteen to forty feet in thickness, built up in layers of various thickness, from one inch to thirty inches. It may be divided into four divisions, the upper part ranging from one to three feet thick, is not well stratified. The next from three to five feet, made up of layers from three to fourteen inches, are easily raised, and are of fine and desirable quality. The next three layers are from ten to thirty inches each thick, and present the most inviting source as a building stone. This part of the strata is of a light drab color, homogeneous, can be quarried without blasting, and is said to *dress* well. This part of the stone gives incontestable evidence of its durability. Below this in some places there are seams or layers of highly crystalline stone, nearly white, and very durable. It would be as proper to call it marble as limestone. The Newtonville limestone is first seen on Jonathan's Creek, about six miles from Zanesville. It extends about six miles up the creek. In some places it is buff, gray, light drab and many other colors, but everywhere giving evidence of great durability. Most of it may be said to be a true limestone. A partial analysis of the upper layers would indicate that it is dolomite."

They are now coming into demand for the construction of public edifices, not in Zanesville only but in cities in other sections of the State. They are found imbedded in the river hills and along the lines of railroad, and are easily and cheaply quarried. A very superior building stone is found in the South-western section of the County which has much the appearance of the celebrated "Waverly sand stone," and when polished is almost equally as beautiful. There are also in the immediate vicinity of Zanesville, and in various neighborhoods throughout the County, quarries of flag-stone of fine grain, beautiful appearance, of superior quality and adjusted, by the touch of the hammer, into almost any required form. These flags are very durable, the sand is fine and mica is so disposed in horizontal plates that it fractures in smooth, flat surfaces. There is also stone in different neighborhoods suitable for the manufacture of glass, and used extensively by the Zanesville glass manufacturers. Builders' and moulding sand is abundant, sufficient to meet any demand, in all parts of the County.

*Buhr.*—What is called "Buhr Stone" is found in the Western section of the County. It exists on both sides of the line dividing Muskingum and Licking Counties, and extends into the North-east corner of Perry County. The stone is of a grayish or yellowish white, sometimes passing into hornstone, exists in beds from two to six feet in thickness, is fine grained and compact, and well calculated to give a fine edge to cutting tools or implements. The Indians used the compact hornstone for arrow heads. This Buhr was, years ago, quarried to quite an extent, and made into mill-stones, but as the material lacked tenacity they were not regarded with equal favor with the "French Buhr." Their manufacture has of late been abandoned, and at present this Buhr is not sought.

*Potters' Clay, Gypsum and Kaolin.*—Potters' Clay is found in many sections of the County. It exists in seams varying from a few inches to twelve and fourteen feet in thickness, and in quantities sufficient to be successfully employed in the manufacture of pottery ware. The conversion of this clay into ware has, for many years, been an important industry of this County, and a source of large revenue to those engaged in its production.\* A bed of

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\* The following note of this Potters' Clay furnished by James P. Egan, before quoted, may be of interest in this connexion, and useful to all persons engaged in the pottery business, or expecting to engage in it. He says:

"This Potters' Clay presents all the qualities desirable for the successful manufacture of Pottery ware. Some of these clays are hard and compact, some soft and unctuous, some very infusible while others are very fusible, and such

Gypsum has also recently been discovered about six miles West of Zanesville, but its extent has not yet been determined. It is not quite white, but has the appearance of being a good article, and is the only mineral of the kind yet discovered in the Muskingum Valley. A twelve foot seam of Kaolin has also recently been discovered in the Eastern section of the County, the clay being of the same composition from top to bottom of the seam. The following analysis shows its character :

Silica.....	44.60
Alluminæ.....	34.20
Lime .....	.30
Iron.....	.70
Alkalies .....	
Water.....	19.60

*Fire Proof Materials.*—Large deposits of clay suitable for making fire brick are found in the immediate vicinity of Zanesville, and in other neighborhoods throughout the County. Glass stone is found in the Northern portions of the County in the river hills, millions of tons of which can be quarried, and it exhibits, on comparison, no perceptible difference from the celebrated stone of England used in the manufacture of iron and steel, and which is considered the best fire proof material yet discovered. It is most refractory, and the analysis proves it very pure silica, containing a small per cent. of potash.

*Salt and Petroleum.*—Borings for salt water have been made at various points along the Muskingum river in this County, and also on the Licking and Moxahala and Salt Creeks. In no instance has there been a failure to obtain salt water, though in some instances the water was deficient in strength or quantity, and unprofitable to evaporate. In all there have been about sixty salt wells sunk in this County, but only a small number of these are at this time in operation. The water is evaporated by the use of coal, and while

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are known as 'Slip Clays.' The fusible clays depend upon the amount of lime, iron, sand, etc., intermingled with them. The following is the analysis of one of the most extensive seams, and corresponding with what is known among glass manufacturers as German clay, viz :

Silica.....	49.80
Aluminæ.....	35.20
Iron.....	.70
Alkalies.....	Trace.
Lime .....	.65
Water combined.....	12.98

This analysis was made from a sample of clay taken from a bank in Springfield Township, two and one-half miles from Zanesville."

some of the wells have produced as high as seven thousand barrels per year, others have not produced half that amount. As a branch of industry, the salt business does not command that importance it did years ago. Should the demand for salt increase, the salt business revive and its manufacture again bring remunerative prices, these salt wells could all be again put in operation at comparatively small cost.

Petroleum wells have also been bored in the Southern part of the County, and petroleum in considerable quantities obtained. This oil, for lubricating purposes, has no superior and commands a ready market, but the price for the last few years has been such as to discourage its production.

*Other Minerals.*—Other minerals of less importance than those above named might be mentioned as here existing, but enough has been presented to indicate in this particular the resources of the County. There are other deposits of stone and clay than those enumerated above, but their value in the arts or otherwise remains to be tested. Many details might have been given, interesting to the general reader as to the student or man of science, but to do this would be traveling beyond the purpose herein contemplated. Enough has been presented to demonstrate that this section is amply stored with all those minerals so necessary to the wants and conveniences of mankind, and which must, at no distant day, prove not merely a permanent source of wealth to the community which may here be gathered, but the State and country at large.

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## CHAPTER IV.

### RAIL ROADS — TURNPIKES — CANALS — NAVIGABLE STREAMS — WATER POWER ETC., ETC.

*Rail Roads.*—The Central Ohio Division of the Baltimore and Ohio Rail Road passes through Muskingum County about midway from East to West. The Pittsburg, Cincinnati and St. Louis road passes through the Northern section of the County, and the Cincinnati and Muskingum Valley branch of this last named road passes through the County about midway from North to South.



The lengths of these lines of railway within the County are as follows :

Baltimore and Ohio, C. O. Div.....	33 miles.
Pittsburg, Cincinnati and St. Louis, C. & M. V. Div.....	25 "
Pittsburg, Cincinnati and St. Louis.....	14 "

The taxable value of these roads on the duplicate of the County for taxable purposes, including track, rolling stock and equipments generally, but excluding the real estate owned by these several roads, is nearly one million of dollars.

Besides the foregoing roads, charters have been secured for a road direct from Zanesville in a northerly direction to intersect the Pittsburg, Fort Wayne and Chicago road at Loudenville, one from Zanesville to Marietta, and another from Zanesville to Woodsfield and Bellaire. These proposed roads may not be constructed for several years, and yet the mineral resources of the country through which they are proposed to pass are scarce inferior to any in the State. Besides the above, other lines of railway are in contemplation and under construction in the Western and North-western sections of the State, designed ultimately to reach the coal fields of Muskingum County and South-eastern Ohio.

*Turnpikes.*—There are within Muskingum County forty miles of Turnpike, as follows:

National or Cumberland road.....	23 miles.
Zanesville and Maysville Turnpike.....	12 "

The former of these roads was constructed by the General Government, and in the most permanent and substantial manner; the road-bed being sixty feet wide, covered with metal (limestone) from one to three feet in thickness, and the highest grade is three degrees. It is under the management of the Board of Public Works of the State. The Zanesville and Maysville Turnpike, extending from Zanesville to the Ohio river opposite Maysville, Kentucky, is very similar in character to the National road, there being no substantial difference in construction or grade.

*Navigable Streams.*—The Ohio canal from Cleveland to Portsmouth passes through the Northern section of the County, a distance of about twenty miles. The Muskingum river is a navigable stream improved by slack water navigation, dams and locks, from the Ohio canal at Dresden to the Ohio river at Marietta, a distance of ninety-four miles. From Zanesville to Marietta, seventy-eight miles, it has a capacity to carry boats of from two hundred and seventy-five to three hundred tons burthen, and from Zanesville to the Ohio canal boats of from one hundred and fifty to two hundred tons burthen. The supply of water is such that it is navigable its whole length almost

the entire year, though not all the time for boats of heaviest tonnage. It is only during the winter season when the river is closed by ice that navigation is entirely suspended, and boats ply on this stream when boats of the same capacity on the Ohio are compelled to stop running for want of water.

*Water Power.*—Allusion has heretofore been made to the water power afforded by the tributaries of the Muskingum river. There were, a few years ago, within Muskingum County thirty-two flouring mills, running one hundred and fifty pair of buhrs, and although on all the creeks and streams there are still to be found mills, yet, owing to the cheapness of coal, steam has, in most parts of the County, taken the place of water power. At the Falls of Licking, three miles West of Zanesville, there is a water power, constant, unvarying, free, sufficient to drive thousands of spindles, but unemployed and running to waste. At Zanesville the water power is immense—hardly to be estimated. The river has here a natural fall of from six to eight feet, and by aid of a dam ten feet in height a fall of from sixteen to eighteen feet is secured. This water supply is obtained from the canal through which boats pass, extending from a few rods above the river dam to a distance of near three-fourths of a mile below. It is employed only to a very limited extent. At Duncan's Falls, nine miles below Zanesville, there is another dam, which, with the natural fall of the river, furnishes a water fall of from twelve to fourteen feet. The canal is here one and one-fourth miles in extent, and the water power unemployed, like that at Zanesville, may be said to be beyond computation. So at Simm's creek, seven miles above Zanesville, there is another dam with like unimproved water power facilities as at the other points named.

*Review.*—From the foregoing brief review of the resources of Muskingum County, it must be acknowledged that few sections of territory of like extent command, in a higher degree than is here found, all those elements of wealth which constitute a prosperous and rich community. The agricultural capacity of the land, the mixed husbandry that exists, the easy drainage and consequent health that prevails, the inexhaustible mineral resources that abound, the facilities for transportation to all sections both by water and rail, the extent of water power, all combine to render this at no distant day one of the most populous and wealthy sections of our entire country, either East or West. The business citizens of the County are realizing this more and more daily, and the consequence is increased activity in all departments of trade, and all the industrial occupations pursued. A denser rural population will here be gathered, in a very few years, than will be found in any other

County of Ohio. The County is, as it were, just being opened to the hand of industry, and the demand of the times for coal, iron and other minerals, must necessarily gather hither the energy and enterprise that will develop these resources to the fullest extent. It would be hazardous to predict the vast changes which must here be effected within a very few years.

## PART II.

# ZANESVILLE.

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### CHAPTER I.

#### PRELIMINARY SKETCH—LOCATION—POPULATION—WARDS.

*Preliminary Sketch.*—In May, 1796, a law was passed by the Congress of the United States authorizing Ebenezer Zane, of Wheeling, Virginia, to survey and construct a road from Wheeling to Limestone, or what is now Maysville, Kentucky. The succeeding year Mr. Zane, accompanied by his brother, Jeremiah Zane, and his son-in-law, John McIntire, proceeded to survey and mark out this new road. On proceeding West to the Muskingum river it was first determined to cross the stream at what is now the village of Duncan's Falls, but foreseeing the value of the hydraulic power created by the falls of the river where Zanesville is situated they determined to cross the river at this latter point. The compensation to be paid for the work of surveying and opening this road was a warrant for three sections of land granted by Congress, one of which was to be located at the place of crossing the Muskingum river. In 1799 Zane and McIntire laid off the first plat of the town on the section thus selected, calling the place Westbourn. Shortly subsequent to this a Postoffice was here established under the name of Zanesville, and the village then took the name of the Postoffice. By the act of the General Assembly of Ohio creating Muskingum County Commissioners were appointed to select a site for the County seat, who, upon examination, reported in favor of Zanesville. After the establishment of the County-seat the town began to rapidly improve, the accessions to its population being principally from the Middle and Eastern States. In 1810 a law was passed by the General Assembly of the State in session at Chillicothe, which place from the adoption of the State Constitution to this date had been the capital of Ohio, fixing the seat of government at Zanesville until otherwise provided. The necessary State buildings were erected by the County, and the General Assembly of Ohio assembled here during the sessions of 1810-11 and 1811-12, when Columbus

was selected and became the permanent seat of government of Ohio. For a number of years succeeding this Zanesville was regarded as one of the principal towns of Ohio. But the extensive internal improvements which were inaugurated at an early period in the history of the State, and which were extensively prosecuted under State authority, had the effect to direct immigration to other sections and build up rival communities, and Zanesville for a time lost, to some extent, her relative position as a manufacturing and commercial town. But the resources of Muskingum County, the advantages of the city for trade and business, and the position of the place as a railroad centre are now arresting public attention and directing it to this point to a degree not hitherto known, and imparting to the place a healthy and vigorous growth. The object is, however, not here to furnish history, but present Zanesville as it is, and as it stands related to the business world.

*Location.*—Zanesville is located near the geographical centre, as also the centre of population and business, of Muskingum County. It is situated on both banks of the Muskingum river, and that portion West of the river is again divided by Licking river, the different sections of the city being connected by large and permanent bridges. It is on the meridian of forty degrees of North Latitude. Its mean annual temperature is about 57 degrees, showing its climate corresponds with that of St. Louis, Cincinnati and Baltimore. The distance of the place from the more important points in Ohio are, by rail, as follows :

Zanesville to Cincinnati.....	170 miles.
“ Dayton.....	123 “
“ Columbus.....	59 “
“ Toledo.....	183 “
“ Sandusky.....	145 “
“ Cleveland.....	137 “
“ Bellaire .....	78 “
“ Marietta.....	82 “
“ Marietta (by river).....	78 “

Railroads are in process of construction which, when completed, will connect Zanesville with Pomeroy, 80 miles, and Gallipolis, 95 miles. While now the communication between all parts of the city is free and the transit rapid, thus to a considerable extent removing the obstruction which the rivers create, the necessity exists for additional bridges, and such are in contemplation and will be erected at an early day.

*Population.*—In population and wealth Zanesville is the sixth city of the State, the leading cities being Cincinnati, Cleveland, Columbus, Toledo, Dayton and Zanesville. By a census taken under the

authority of the City Council in September, 1873, the population of the city was then ascertained to be 16,536. By an enumeration of the youth, of school age (between five and twenty-one years,) taken under the direction of the Board of Education in September, 1873, the number of such youth was ascertained to be 5,045, an increase over the enumeration of 1872 of 509. The population is, at this time, increasing more rapidly than at any preceding period in its history ; and should another census be taken in the fall of 1874 the population will not fall much, if any, below 20,000.

The city is divided into nine wards, six being situated East and three West and South of the Muskingum river, and is now organized under the general law of the State for the creation and government of municipal corporations. It is also divided into five School Districts to accommodate the children and youth who attend upon the public schools.

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## CHAPTER II.

ZANESVILLE AS A PLACE OF RESIDENCE—ACCESSIBILITY—ELIGIBILITY—  
HEALTH—SCHOOLS—LIBRARIES—EDUCATIONAL FACILITIES—CHURCHES  
—SOCIETY.

*Accessibility.*—One of the chief items and indeed of leading influence in determining the value and attractiveness of a place for residence, as also its importance in a business point of view, is its accessibility. It is a consideration which at this day is neither overlooked nor forgotten, and as trade and commerce increase and population advances it constantly gains in importance. In this particular few places possess advantages superior to Zanesville. Consider, for a moment, the position here commanded.

By means of the Ohio canal, Zanesville is connected with Portsmouth on the Ohio river, and Lake Erie at Cleveland, and all the principal towns and cities in the interior of the State situated on the canal and its branches. By the Muskingum river, affording a water capacity sufficient to transport steamers of from two hundred and seventy-five to three hundred tons burthen, it is connected with the Ohio river at Marietta, and from thence with all points on the

Ohio, Mississippi and Missouri rivers and their tributaries. Steamers loaded at the Zanesville wharf have discharged their cargoes at Pittsburg and Brownsville in Pennsylvania, at St. Paul and New Orleans on the Mississippi, and at St. Joseph and Omaha on the Missouri.

A glance at the map will demonstrate that the railroad facilities are equal to those of any other place. It has the Central Ohio Division of the Baltimore and Ohio Rail Road, being an extension of the latter road westward from the Ohio river, thus affording direct communication with Wheeling and Baltimore on the East, and Columbus, Chicago and all other western cities, on the West. By the Cincinnati and Muskingum Valley Railway, being the Southern branch of the Pittsburg, Cincinnati and St. Louis road, Zanesville is again directly connected with Steubenville and Pittsburg, Philadelphia and New York on the East, and Cincinnati and St. Louis on the West. By way of Newark and Mansfield, Zanesville is connected with Sandusky, Toledo and Detroit, on the North-west. During the year 1874 the Cleveland and Zanesville line of railroad will be completed, and Zanesville will then have direct communication with Wooster, Akron and Cleveland, and the other lake cities on the North. By the Marietta and Pittsburg road it is connected with Marietta and Parkersburg, thus making the place accessible to the valleys of the upper Wills creek and Duck creek, and by the same road again it is made accessible to the valleys of the lower Wills creek, the White Woman and Tuscarawas rivers. Indeed the entire region of the upper Muskingum is now, by rail, rendered directly and immediately accessible to Zanesville. By the Hocking Valley road Zanesville is connected with Athens and all points on the Marietta and Cincinnati road, and by other lines of railroad now in the course of construction Zanesville will, within two or at most three years, be connected with Pomeroy and Gallipolis. In a short time the Mansfield and Cold Water Michigan road will be extended South east to intersect the Cleveland and Zanesville road a few miles north of Zanesville, thus again forming an immediate communication with North-western Ohio and Michigan. In addition, by an inspection of the map, it will be seen that other roads are in contemplation, charters for the same having been obtained, with the view of developing the mineral resources of the County, and the territory situated between it and the Ohio river, the construction of which roads is only a question of time. It will thus be seen that the railroad facilities of Zanesville and its lines of water communication are such as to render the place equally accessible with any in the entire West. The following table gives the dis-

tance from Zanesville to the larger cities outside of Ohio, East and West, viz :

Zanesville to Baltimore.....	454 miles.	•
“     Pittsburg.....	151	“
“     Philadelphia .....	509	“
“     New York.....	595	“
“     Buffalo .....	320	“
“     Detroit .....	248	“
“     Chicago.....	383	“
“     St. Louis.....	510	“

*Eligibility.*—The claim in behalf of Zanesville on the score of eligibility can with confidence be made. Its situation in this particular challenges comparison. Its immediate surroundings are most picturesque and beautiful. The walks and drives about the city afford, at every turn, variety of view and beauty of landscape unsurpassed. There is here no sameness, no dull monotony, but the eye is everywhere and constantly relieved by the view presented. A drive along the banks of the river, or a sail upon its surface, is an event that the mind delights to dwell upon. The slopes, rising grounds and hill sides, in the immediate vicinity overlooking the valleys of the Muskingum, Licking and Moxahala, afford sites for residence that command the admiration of all persons of refined and cultivated taste. It was the remark of one who had had the experience of travel in nearly every State of the Union, after seeing the surroundings of Zanesville, that he had been in few places which furnished as many beautiful landscape views as are here presented. The remark was, however, only the reiteration of that of every individual who has here had any opportunity for observation.

*Health.*—No healthier place can be found in Ohio, if in the whole country, than Zanesville. This would be inferred from the easy drainage, the purity of the water, the character of the country round about, the evenness of the climate as shown by the mean temperature of the place already alluded to, and the varying breezes that float along the valleys and fan the hillsides in its immediate vicinity. It is also demonstrated from the small number of interments in the several city cemeteries during the year 1873, as shown by the reports of the several sextons having the cemeteries in charge. A fact here in this connection deserves attention and should not be omitted. Among the teachers and pupils of the Putnam Female Seminary, now in existence over thirty-five years, and averaging annually from one hundred to one hundred and twenty-five pupils, there has never occurred a single death. The first death that has occurred among the teachers of the Zanesville



Public Schools since the organization of the present system of schools, more than twenty years ago, was in March, 1874. It may also be stated that no epidemic of a serious character, or one assuming alarming features, such as have occasioned anxiety and created consternation among other communities, has ever here prevailed.

*Educational Advantages.*—Another important consideration in determining the value or desirableness of a place for residence is the character of the educational facilities afforded. The public schools of Zanesville have ever been regarded as among the best in the State. Graduates of the Zanesville High School have, with scarce an exception, become successful and prominent business men in all the relations they have sustained in life. During the last school year there were employed in these public schools sixty-one teachers, including Superintendent and teachers in music and penmanship. The schools are in operation forty weeks in each year, and are entirely sustained from the public fund except as hereafter noted. The course of study is thorough, that of the High School requiring three years to complete it. The subject of erecting, at an early day, a High School building, commodious, adequate in all respects to the wants of the times and conformable to the spirit and intelligence of the age, is now engaging the attention of the Board of Education, the grounds for the same, one entire square in the central part of the city, being secured for such purpose. Connected with the High School is a Commercial School, where facilities are furnished for obtaining a complete commercial and business education, and equal to any school of like character elsewhere established.

*McIntire Fund and Children's Home.*—In addition to the Common School Fund provided by law for the free education of the children and youth of the place, the city is in possession, through the munificence of the late John McIntire, one of its founders, of a constantly increasing fund, amounting at this time, in the aggregate, to over a quarter of a million of dollars, the annual proceeds of which is available for educational purposes. This fund is securely invested, and the proceeds, after sustaining a school established for the support of orphan and destitute children in an institution denominated the "Children's Home," and furnishing books for those who are unable to supply themselves, is placed at the disposal of the Board of Education for school purposes generally. The "Children's Home" above alluded to, under the management of a Board of Trustees, is designed to take up the poor outcast, clothe and provide for in a proper manner and furnish

suitable physical, moral and intellectual training, until a home can be provided in some suitable family. It has done and must continue to do much good, and though comparatively in its infancy must, in the future, become one of the attractive benevolent institutions of the city.

*St. Columba's Academy.*—This is an Institution under the management and patronage of the Catholics. It is a large and flourishing school, numbering one year with another about three hundred pupils. The buildings are large and commodious, ample for the accommodation of all who seek or are brought under its advantages, and the grounds therewith connected are large and tastefully arranged, being decorated with shrubbery and laid off in walks and plats.

*Putnam Female Seminary.*—This Institution is under the management of a Board of Trustees, and at the present time has a corps of six teachers, including the lady principal. The building is large and admirably adapted to the purpose for which it is designed, the grounds are extensive and attractive, and the average number of pupils one year with another ranges from one hundred and twenty-five to one hundred and fifty. For thoroughness of scholarship and gentleness and kindness of discipline, together with constant watchfulness over the physical and moral training of the pupils, this Institution is equal to any in the State.

*Commercial College.*—Zanesville has but one Business or Commercial College outside of that connected with the High School. This sustains the character of being a first class institution of the kind, and many of the young men who have been connected with it now hold first class positions in the largest Banking and Commercial houses of the country.

*Libraries.*—The Zanesville High School has a Library of 850 volumes. The Putnam Female Seminary a Library of 2,500 volumes. The Zanesville Atheneum a Library of 5,500 volumes, and among them many rare and valuable works. This last institution has a charter granted by the State, and holds or owns property in addition to its Library valued at from eight to nine thousand dollars. Connected with the Library is a reading room, on the tables of which are found the leading papers and periodicals of the day, free to all persons not members of the association residing without the corporation of Zanesville, and open each day of the week from 7 A. M. to 9 P. M.

*Muskingum College.*—This Institution is located at New Concord, fourteen miles East of Zanesville, on the Baltimore and Ohio Railroad. It has been in existence about thirty years, being organized

under a special charter granted by the Legislature of the State, and has a corps of five professors. Among its graduates are quite a number who occupy first class positions in the learned professions. Indeed few institutions of learning, in proportion to the number of graduates, have sent out a larger number of young men who have attained prominent positions in social, business and professional life, than has Muskingum College. During the year 1873 a large and commodious building was erected (in addition to the former building) for the accommodation of the students and for library and society halls. The Institution is located in the middle of a highly intelligent, moral and religious community, and its Board of Trustees are selected from the various religious denominations.

*McCorkle College.*—This is a new Institution, located at Bloomfield, in the North-eastern section of the County, chartered under the general laws of the State for the incorporation of colleges and institutions of learning, and though its Board of Trustees are selected from the various religious denominations it is maintained and supported by the Seceders. A large building was erected last year for the accommodation of students, and on first opening in September, 1873, forty students were admitted and the various classes fully organized. Its corps of instructors consists of a President and three professors, and it begins its history under most encouraging prospects. The community surrounding, in respect to morals and intelligence, is equal to any elsewhere to be found, and takes a lively interest in all that pertains to the prospects of the institution.

*Churches.*—Zanesville has twenty church edifices and twenty-two religious societies, distributed among the various religious denominations as follows: Three Presbyterian, one United Presbyterian, four Methodist Episcopal and one Protestant Methodist, two Baptist, two Lutheran, (German and English,) two Catholic, (German and English,) one United Brethren in Christ, one Episcopal, and three colored, (two Baptist and one Methodist.) The Universalists and Hebrews have each quite large societies, but as yet neither have churches erected for their accommodation. Every religious denomination above enumerated has at this time a settled pastor. The Young Men's Christian Association has a reading room open at all hours of the day and in the evening, and its meetings are most usually held in some one of the halls of the city.

The social, moral and educational advantages of Zanesville, it will be seen from this review, are equal to almost any other place. Here the youth of either sex can receive all the advantages of a business and classical education, and at night be under the

parental roof. What parent looking to the welfare of his children could ask for more in an educational point of view than is here secured.

*Society.*—The society of Zanesville, as also that of Muskingum County generally, was originally made up from a moral and intelligent class of emigrants from the Middle States. It retains, to a considerable extent, the staid, conservative character it originally possessed, and is remarkably free from the extravagancies that characterize many other communities. It is not on the one hand a stereotyped model, nor is it on the other characterised for giddiness, dissipation, folly or social extravagances or excesses. Sensations are rarely enjoyed, and while it may be said to be up to the times, a "golden mien" may be regarded as the peculiarity of the Zanesville people.

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### CHAPTER III.

ZANESVILLE AND ITS INDUSTRIES—IRON BUSINESS—FURNACES—ROLLING MILL—MACHINE SHOPS—FOUNDRIES—AGRICULTURAL IMPLEMENTS—GLASS MANUFACTURES—OTHER INDUSTRIES.

To the man of business and business enterprise the contemplation of Zanesville as Zanesville is, must surely be a subject of pleasing interest. Not merely to the citizen of Zanesville is this the case. No one who watches the growth and prosperity of communities, whose soul is enlivened with the progressive ideas which characterize an intelligent and enterprising people, can escape the conviction, when witnessing the varied industries here established and the extent to which they are prosecuted, that thrift and success generally prevail, and that a solid business character is maintained. Even during the unprecedented panic of the past winter not a single manufacturing establishment suspended operations, not a merchant failed in business. On the contrary, both mercantile and manufacturing enterprises, new and hitherto unknown, have been projected, organized and pushed forward with an energy and on a scale of magnitude unprecedented in the history of the place. It is from such considerations that attention is now invited to the industries of Zanesville.

*Manufacturing Interests.*—The manufacturing interests of Zanesville are at this time its leading attraction. It is a growing

interest and reflects credit upon the business character of the place. It is imparting to the city a permanent and solid character, and placing it among the most prosperous cities of the West. The progress made in this direction has been much more rapid during the past year than during any preceeding year of its history. Old industries have been enlarged and extended and new ones added which bid fair to become large and prosperous enterprises. What, until recently, was regarded with indifference, has now become a source of pride. This stimulus to manufacturing industry is attributed to the fact that fuel and living are so cheap, market supplies of all kinds so abundant, the facilities for shipment so superior, and the location so central and generally so advantageous. Besides a more enlightened and liberalized sentiment than heretofore existed now prevails, and there is exhibited more of a disposition to encourage productive enterprises by furnishing money at liberal rates to aid in their prosecution. In the language of one of Zanesville's own citizens, "The incubus of usury no longer finds comfortable rest in a driving business community." Every manufacturing enterprise here established, when managed with careful, practical and energetic hands, has proved a success, a success, too, which rewards industry and stimulates effort. To enumerate, the first industry which claims attention is that devoted to the

*Manufacture of Iron.*—The iron business of Zanesville in its various branches constitutes, at this time, its most important industrial interest. This interest is a growing one, and is destined, at no distant day, to become one of vast magnitude. The reason of this is obvious. Zanesville, as shown in a previous chapter, is surrounded with beds of iron ore. You have, as it were, in many places, but to tickle the earth and the ore becomes visible. The hills in the immediate vicinity of Zanesville abound with this valuable metal, ready to be manipulated by the hands of skilled artisans into whatever shape utility, genius or taste demands. On account of the facility with which ore can here, at all times, be obtained, the native ore being delivered from wagons and the foreign by rail, and the fact that coal in such abundance, suitable for making coke and smelting, here abound, and that hills of limestone are in full view of the city, iron is made at the most reasonable rates, and at the same time with remunerative profits to the mill owners. Any one will be satisfied of this when a comparison of the price of the raw material is here instituted with the price of the same at other points, and also takes into consideration the other items of expense that enter into the manufacture of iron. It is estimated by

experienced iron men that iron can here be made at from three to five dollars per ton less than at any other point in Ohio, possessing like railroad and water facilities for transportation.

*Furnaces and Rolling Mill.*—Zanesville has two Furnaces and one Rolling Mill, all owned and operated by the "Ohio Iron Company." At this time one of the furnaces, charcoal, is not, and has not for some months been in operation. The other furnace, and much the most extensive, using coal and coke exclusively in the manufacture of iron, went into operation on the 7th day of September, 1871, and from that day to the present time has been continuously in blast, excepting temporary stops made without blowing out, (or cooling down,) and is still (April, 1874) running.\* The average product of pig metal during this time has been something over one thousand tons per month. The Rolling Mill has an annual capacity of near eight thousand tons of manufactured iron. The company has its own coke works, new but not yet in complete operation, consisting of twenty-four ovens, and these, when perfected according to the plan or design of their construction, are expected to furnish all the coke the company will require. The company has in its constant employ, in and about the Furnace, Rolling Mill and coke works, about three hundred men, exclusive of about one hundred coal diggers and haulers, and on an average the year round another hundred engaged in mining and

\* The fact that the Zanesville Furnace has been in full blast, and the rolling mill in operation to its utmost capacity, during the entire panic, speaks much for the advantages of Zanesville as a point for the manufacture of iron. The *Miners' Journal and Statistical Register*, published at Pottsville, Pa, an annual publication, in the number for January, 1874, has an article upon "the effects of the panic upon the American Iron Trade." The following items, condensed from the article, will be read with interest at this time:

On the 31st day of last December there were in the United States 57 Rail Mills. The Journal had at that date reports of the condition of 50 of these mills. Of these 50 mills, 33 were standing idle, 10 running full time, and 7 running on half time.

There were also 650 blast furnaces in the United States, and the Journal, on the same day, had received reports from 385 of these furnaces. The following was their condition:

Stacks in blast.....	247
" out of blast.....	138

The Journal, commenting on these results, says:

"From the foregoing tables it will be seen how severely the two leading branches of the iron trade were affected by the panic at the beginning of the new year. Over 30,000 hands were wholly unemployed, and over 10,000 employed only a part of the time. \* \* \* Statistics in our possession also show that the wages of all iron workers have been largely reduced. These figures do not require comment."

hauling limestone and ore. In the works of the company there are employed nine steam engines of various sizes, three of which are very large and powerful; five steam pumps and one eighteen ton locomotive. The entire works of the company cover about ten acres of ground, and they are situated immediately on the line of the two railroads passing through the place, and on the bank of the Muskingum river, thus obviating the expense and necessity of drayage, either of the raw material or manufactured product. Few iron mills have any where been projected on a more enlarged scale than those here established, and few have anywhere been more successfully operated. The propriety of erecting additional Furnaces and Rolling Mills has been, of late, much discussed, but the matter has not as yet assumed definite and tangible shape. A revival of business and with this an increased demand for iron will, no doubt, at an early day, put into operation such projected enterprises. The capital for the purpose is at command whenever it can be employed to advantage.

*Machine Shops.*—A large capital is employed in Zanesville in the manufacture of steam engines of all kinds, and of portable steam saw mills. Three establishments are thus exclusively engaged. The product of two of these amounts, each, to more than three-quarters of a million of dollars annually. Their wares have found a sale in almost all sections of the globe. Portable mills of Zanesville manufacture have been ordered from nearly every State and Territory of the Union, including California and Oregon; from Canada, Mexico, South America, Sandwich Islands, Europe, Australia and New Zealand. These shops are as finely arranged and as completely equipped as any similar establishments elsewhere found, and no stronger testimony could be presented of the high character in which these mills and engines here made are held than the fact that they have been so extensively sought, and from so many and highly distant quarters.

*Foundries.*—Zanesville has four Foundries. In these are manufactured a great variety of castings, but for the most part they are employed in making office, cook and parlor stoves, of almost every variety, grates, fire fronts and mantles, hollow ware of all kinds, and ploughs and agricultural implements. The market for these wares, in addition to supplying the home demand, is found principally in the Western and Southern States. The "foundry business" in Zanesville has ever been an important branch of industry, and been successfully prosecuted by those engaged in it. The capital in this way employed is large, and the interest a rapidly growing one.

*Agricultural Implements.*—The manufacture of Agricultural Implements has hitherto commanded little attention in Zanesville. It has not been made a specialty. Farming implements generally, aside from the making of plows in the principal foundries of the city, have been manufactured on a very limited scale. But in this respect a new departure has been had. In July, 1873, a manufacturing company was organized under the name of "the Brown Manufacturing Company," with a capital of three hundred thousand dollars, articles of association were secured under the general incorporation laws of the State, and immediately the company commenced operations. A tract of between four and five acres of ground was purchased situated on the line of the two railroads and along the East bank of the Muskingum river, and convenient to the business portion of the city, and the erection of suitable buildings was at once commenced. Such was the energy with which the work was prosecuted that in January, 1874, the company was prepared to fill orders for the various articles of their manufacture, consisting of plows of every variety, common and wheel cultivators, threshing machines, mowers and reapers, farm and lumber wagons, platform and express wagons, buggies, carriages, and in fact every variety of farm implements called for. An idea of the extent of this establishment may be had from the size and extent of the buildings erected for its accommodation. All are of brick, the main buildings being three stories in height above basement, two hundred and thirty feet long and fifty feet wide, with wing one hundred and eighty-five feet long, also three stories in height. In addition there is attached a foundry where all the castings used in the establishment are designed to be made, and an extensive black-smith shop. The company expects to employ, when in successful operation, not less than three hundred men, and the market for its commodities, already to a considerable extent secured, will be found, in addition to the home and neighborhood demand, in the States of Missouri, Arkansas, Texas and other Southern States.

*Glass Manufactures.*—The manufacture of glassware in its various shapes has ever been an important branch of Zanesville industry. Long years ago, in the infancy of manufactures in Zanesville, the glass works were regarded as the leading institution of the place. The business from that day to the present time has constantly grown in importance, and it has now become one of the leading industries here established. There are two glass factories in the city, one of which constantly employs from sixty to seventy five men, and is engaged exclusively in making druggists' and



hollow ware, and the other, employing from one hundred and twenty five to one hundred and fifty men, manufactures druggists' and hollow ware of every variety, colored glass ware, window glass of all sizes, and glass for show cases and store fronts, equal in quality and size to any made west of the Alleghany mountains. The lime and sand stone used in these establishments are obtained in the vicinity of Zanesville, and are regarded equal to any material of the kind elsewhere found. The market for these wares is secured in the West, North-west and South. The abundance and cheapness of the raw material, and the facilities for transportation are such, that the industry has here been regarded as a most successful one, and one which, in the not distant future, must acquire vast magnitude and importance.

*Door and Sash Factories.*—Another important industry of Zanesville is its door and sash factories. In these factories are not made doors and sash merely, but window frames and blinds, flooring and general furnishings for buildings, in fact every thing connected with the department of carpentry. There are six establishments of the kind in the city, in all the machinery is driven by steam power, and the quality of the work, its finish, style and durability, is fully up to the standard adopted in the largest cities. Not for private residences merely, but for offices, churches and public structures of all kinds, are orders filled for whatever is demanded. Zanesville possesses facilities for the successful prosecution of this branch of industry peculiarly advantageous. Aside from the fact that the home supply of lumber is considerable in amount, the city is accessible by rail and river navigation to the extensive forests of West Virginia, where the supply of soft poplar is inexhaustible, and has the advantage of canal and railroad for transportation of pine lumber from the forests of Michigan and Canada. There are few points where lumber and material for finishing buildings can be had more cheaply and in greater variety than here. The market for these manufactured articles is not dependant merely on the home demand, but is found in the towns along the different lines of rail road here converging, and also the canal and river.

*Furniture.*—To the manufacture of furniture here little attention has hitherto been paid. There is at this time, however, manifest a rapidly increasing interest in this business, and the indications are that at a not distant day it will be considered one of the important industries of Zanesville. The fact that steam power is here so cheap, and that lumber of every variety employed in the manufacture of furniture, pine, white and yellow poplar, black and white walnut, oak, wild cherry, maple and other woods, can here be sup

plied so cheaply and readily, has had the effect recently to impart to this business an unwonted stimulus. There are now several quite extensive furniture establishments in the city, and the styles of furniture manufactured, parlor and chamber sets, drawing-room and office furniture, have, on account of their elegant finish, commanded general attention, and secured for their proprietors sales in Eastern and Western cities. Parlor sets of the richest and most elegant designs have been ordered from Zanesville shops to furnish the mansions of the wealthy in distant communities.

*Cotton and Woolen Mills.*—Zanesville has one Cotton and three Woolen Mills. The Cotton Mill contains two thousand spindles and twenty-eight carding machines, and, closely connected with this is a large batting mill, the same power driving the machinery of each. The machinery of each of these mills is all new and all corresponds, and is of the most approved patterns. Additional machinery is being added, which, when completed, will make these mills as complete throughout as can elsewhere be found. The manufactured goods consist of brown muslins, white and colored carpet and coverlet warp, yarns, wrapping twine, tissue and other batting, and other articles of like character. The Woolen Mills, the machinery of two of which are driven by water and one by steam power, have a capacity for manufacturing annually from four hundred and fifty to five hundred thousand pounds of wool. The goods manufactured consist of different varieties of jeans and cassinetts, yarns, and domestic wares generally.

*Flouring Mills.*—Owing to the partial failure of the wheat crop for several seasons past, throughout South-eastern Ohio generally, the manufacture of flour for the Atlantic cities has not of late been carried on as extensively as in former years, yet the manufacturing capacity of the Zanesville Flouring Mills, and the quality of the flour made, should not, in a work of this kind, be omitted. There are, at this time, in Zanesville, only five of these mills, containing in all forty pair of Buhrs, the machinery of three of these mills, and those the most extensive, being driven by water power, furnished by water drawn from the canal, and two by steam power. The Zanesville flour has ever been of a superior quality and commanded the highest prices in the New York market. Some of the fancy brands have been sought to such an extent that the mills have been unable to supply the demand. In the United States Patent Office Report for 1855, testimony is furnished that the flour of the Muskingum Valley took the First Premium at the World's Fair in London. This result may be attributable as much to the superior quality of wheat grown upon the limestone soil of this section of

Ohio, the berry being very large, solid and heavy, as to the ambition of the millers to furnish flour of superior merit.

*Paper Mills.*—Another interest among the more important of the industries of Zanesville should not, in this enumeration, be overlooked. Two extensive paper mills are here in operation, the one employed in the manufacture, principally, of straw wrapping paper, and the other in the manufacture of news and book printing paper. The machinery of these mills is of the most approved pattern, and the demand for their paper comes not merely from neighboring towns and cities but from distant States.

*Burial Cases.*—The manufacture of Burial Cases is a new industry in the place, the business having first commenced less than three years since, and has, from a small beginning, grown to large dimensions, and become one of the important industries of the city. The machinery is driven by water power, the water being taken from the canal. These cases are of elegant design and finish, and in addition to supplying the home demand are called for in other and distant cities. On an average two car loads each week are sent abroad.

*Stone and Pottery Ware.*—Owing to the extensive beds of potters' clay in the immediate vicinity of Zanesville, a large amount of potters' ware is manufactured where this clay abounds, and the industry may be regarded as a Zanesville industry. To such an extent is this business conducted that near one and a half millions of gallons of this ware are annually exported. It is conveyed by the car load to distant States, and by boats to all points on the Ohio and Mississippi rivers. Every variety of this ware is manufactured, no article called for that is not supplied, no order presented that is not immediately filled. As nothing goes abroad for the raw material the entire revenue derived from its sales is brought back and retained in the community. In connection with the manufacture of potters' ware, the manufacture of drain tile has been carried on to a considerable extent, and is destined, at an early day, to become an important branch of this business. The manufacture of tile for roofing has also been here commenced on quite an extensive scale, and thus far has proved a success. The business is, however, in its infancy, and to what extent it may be developed remains to be seen. It would seem, however, the demand must be in excess of the supply, however great that supply may become, as the tile is manufactured from the best fire clay, and burned so as to be impervious to water, and for roofing is regarded as superior to slate, and furnished at a less expense.

*Candies and Confections.*—The manufacture of candies and confections of every variety, and of crackers, has here become a business of extensive importance, sufficient at least to rank it as one of the leading industries of the city. Two large establishments, with approved machinery driven by steam power, are thus exclusively engaged, besides several smaller ones. Some idea of the extent of the business may be formed from the fact that one of these establishments uses thirty barrels of flour and three barrels of sugar daily. The articles made go to almost every State West and to some East of the Ohio river.

*Newspapers.*—Zanesville sustains four Newspaper establishments, one daily and three weekly, and connected with each of these is a job office. There are also in addition three job printing offices where printing and publishing of any kind and to any extent can be procured, from a circular to a quarto. Two of these job offices have connected with them book binderies.

*Omnibus Lines.*—Three omnibus lines, all established the present year, are now in operation, thus connecting all parts of the city and rendering travel easy, rapid and quick. An additional line will be in operation at an early day. A street railway company has been incorporated, and will be organized and the work pushed forward to completion as soon as an additional bridge is secured, the subject of building which is now pending before the Board of County Commissioners.

*Other Industries.*—To go into details in respect to all the various manufacturing enterprises of Zanesville would be tedious, and the work unnecessary. To allude to a few additional to those already enumerated may, however, be proper.

The manufacture of Lucifer matches was here commenced, on quite an extensive scale, in the fall of 1873, and thus far the business has been a success. The encouragement received has been such as to justify the proprietor in enlarging his machinery much beyond what was at first contemplated. Zanesville has three tanneries, the leading one, steam, making from nine to ten thousand sides of leather annually; three soap, candle and lard oil factories, one of which makes annually over two millions of pounds of soap, in quality ranging through every variety, from the fine toilet to that employed in daily or ordinary use, and from two hundred and fifty to three hundred thousand pounds of candles, and one thousand barrels of railroad oil; four marble factories, where can be found monuments of every variety, mantles and whatever else is designed or fashioned from marble blocks or slabs; one last and boot tree factory, where not merely lasts and boot-trees are made

but crimps, clamps, shoe-pegs, instep and tree stretchers; neck yokes; plow handles and wagon and carriage spokes; pick, sledge, hatchet, hammer, hoe, fork and axe handles; tobacco and cigar boxes, kitchen furniture, and in fact almost every thing else called for that can be made from wood, from a clothes pin to a rocking horse; one file works, one brass foundry, one stocking factory, one factory for making paper sacks for grocers and millers, six tobacco and cigar factories, several of them quite extensive, six breweries, and quite a number of other industries of more or less note unnecessary to enumerate.

*Review.*—It will be seen from the foregoing brief review of the manufacturing interests of Zanesville that the place is already well supplied with that which gives permanency, stability and growth to a community. There is here a large amount of skilled labor employed. It is that which enlivens trade, which gives character to business, which builds up and establishes communities. Many of these industries which have been enumerated are yet in their infancy, but the encouragement all such are receiving warrants their success, if judiciously managed. What is a success in one locality in another, under the same management may, and often does, prove a failure. Rarely has a manufacturing enterprise been here undertaken which has not been successfully prosecuted, and manufacturing capital here invested has rarely sought to be transferred to other localities. This fact alone speaks more for the advantages this city affords for the employment of manufacturing skill than whole volumes besides. One argument from fact is worth an entire treatise of mere theory.

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## CHAPTER IV.

### ZANESVILLE AS A MANUFACTURING CITY—FACILITIES FOR MANUFACTURING —ADVANTAGES POSSESSED—FUEL—STEAM POWER—TRANSPORTATION— GENERAL REFLECTIONS.

Zanesville and its immediate vicinity possesses facilities for manufacturing in nearly, if not quite, all the industries requiring skilled labor, it is believed, all things considered, equal, if not superior to any place East or West. In every item to be taken into account in the make up of a manufacturing city comparison is challenged. It was the remark of the late John Quincy Adams, made in reference to the water power here existing, that "Zanesville was the

Lowell of the West." Henry Clay, in one of his letters, after personal inspection of the water power at this point, said: "The water power furnished by the James river at Richmond makes it the best manufacturing site in the United States save that at Zanesville, Ohio." These opinions were expressed before the era of coal and railway transportation appeared. But opinions are nothing, even when entertained and expressed by men eminent in social and political life, unless supported by reasons and sustained by facts. What are the essentials for a prosperous and successful manufacturing community? Let us consider.

*Accessibility, Health, Educational Facilities and Social and Religious Advantages.*—These have all been sufficiently considered in a previous chapter. Nothing further need be said upon these points. Each is important, essential, and all combined are of the highest significance. The community possessing them has an advantage that none other can command. Here they are all found in a pre-eminent degree.

*Cheapness of Living.*—In no city of equal or like importance with Zanesville, one as populous, can family supplies be obtained cheaper than here. This would naturally be inferred from what has been said in relation to the farming of Muskingum County. It is attributable to the mixed husbandry that prevails throughout this entire section of country, the solid and reliable character of the farming population generally, and the large area devoted to gardening, and the numerous small farms in the immediate vicinity of the city. The supply of every article in the line of vegetables and fruits required in the household economy, as also of the cereals, is very great, thereby inducing large competition and consequently low prices. The Zanesville market has ever been celebrated for the variety and extent of its supplies, not only sufficient at all times for the home demand, but furnishing large amounts for shipment to other and less favored places. And as the city grows in population, creating an increased demand for market supplies, the prices, because of the increased territory to furnish the supplies, must remain much as they have been established. The relative cheapness of living here compared with what it is in other cities will hardly be disturbed by increased population.

*Rents.*—Rents here are as low as elsewhere, probably, as a general thing, much lower. This will be inferred from the cheapness of living and cheapness of building material. The cost of a building must ever determine, to a very great extent, its rental value, or the amount to be paid for its occupancy. Capital employed in this way must, relatively, command somewhat the same increase as

when employed in manufacturing and in other industrial pursuits. But so many things are to be considered in determining the rental value of property that it is unwise to speculate or theorize upon the subject.

*Building Material.*—Building materials, everything of the raw material that enters into the construction of an edifice, not only is here found, but abounds. Stone of almost every variety, clay for brick, iron, sand, wood, all are at command. Nothing of the raw material need be brought from abroad. And nothing need go abroad to be manipulated into new shapes and returned for use. Skilled hands are here found to take up the iron, the stone, the clay, the sand and the wood, and convert them all into every variety of shape required by the taste, the interest, the want, or ability of those who use them.

*Water.*—The supply of water, fresh, healthy and cheap, is abundant, and if that the city furnishes is not satisfactory, a supply can always be had by sinking wells to the depth of a few feet. No city in the world is better supplied with this needed element than is Zanesville, and in none is it more cheaply furnished. But of this in a subsequent chapter.

*Fuel.*—Coal, because furnished so cheaply, is the only fuel used. Wood is no longer in demand. There are probably not a dozen families in Zanesville, it is questionable if half that many can be found, who use wood in any manner for fuel. Coal is delivered at so much a bushel, according to quality, many families, especially the more destitute, using the lowest priced coal, or what is denominated "slack." This is delivered at two and one half cents per bushel, or sixty-two and one half cents per ton. For furnaces in dwellings, stores and public buildings, and for stoves, cook and office, what is called "nut" coal is generally used, and this is delivered at from four to four and one half cents per bushel, or a little over one dollar per ton. For the parlor and grate the higher priced coal, lump or block, is employed, and this is delivered at seven to eight cents per bushel, or from one dollar and seventy-five cents to two dollars per ton. For heating purposes the Zanesville coals have no superior. For generating steam they stand unrivalled. They ignite quickly and glow with an intense heat. Now, is there a city in the West where fuel is supplied at a cheaper rate? Is there one where it is supplied as cheaply?

*Water Power.*—This has been sufficiently considered. It is constantly running to waste, stealing uselessly beneath the ground. It is cheap and can be employed, or made available, at a comparatively trifling expenditure.

*Steam.*—There are over sixty steam engines in Zanesville, all at work, and all supplied with and run by “coal slack,” delivered at the prices already named. *The cost or expense, per day, of fuel to feed the steam engines of Zanesville is at the rate, on an average, of about two and one half cents for each horse power, and the steam thus generated serves, in addition, to warm the building when warming is necessary.\** Any one skeptical as to this statement can be satisfied as to its correctness by inquiring at any of the foundries, machine shops, or cotton or woolen mills of the place.† The question again arises, where in all the world can steam be generated at less expense than here? Where at equal expense?

*Grounds.*—For location or ground, on which to erect manufacturing buildings, Zanesville possesses unrivaled advantages. The grounds in and about the city are so situated that millions upon millions of capital might be invested in manufactures and the structures for manufacturing purposes be so located that locomotives, from a choice of railroads, can deposit the raw material from the cars within the buildings, and receive the manufactured wares from the same for conveyance wherever railroad lines extend. Similar conveyance can also be had with canal and steamboat. Thus all expense of drayage, either of the raw material or manufactured article, is avoided.

*Transportation.*—The facilities Zanesville possesses for transportation, having the advantage of the river, canal and railroads, are superior to those of any interior city of Ohio. This, all who are acquainted with the place, will acknowledge. Competition in price

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\* The Scientific American recently contained an article upon utilization of fuel in steam engines, in which it was stated that “a pound and a half of coal per horse power per hour represented the highest economy of the best classes of large engines, and for ordinary sizes such as drive our mills and our work shop machinery, double that expenditure is not considered extravagant. We can only hope to see these figures greatly reduced by some new unimagined and complete revolution in engineering.” It will be seen from the statement of the text that such economy, so far as expense is concerned, has here already been obtained, and that without any effort at economy or design to ascertain how cheaply steam could be generated.

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† The Zanesville Cotton Mill, the machinery of which is driven by an eighty-five horse power steam engine, having steam pipes for heating purposes conducted through all parts of the building, uses, on an average, one hundred bushels of “slack” daily. The Putnam Woolen Mill, with like steam pipes for warming it, having a sixty-five horse power engine, uses, on an average, fifty bushels “slack” daily. This is all the fuel required in these establishments for all the purposes that heat is necessary, washing and preparing the raw material, drying, coloring, everything demanded in the preparation of the raw material and its conversion for market.



for transportation is thus secured to an extent scarce elsewhere equalled, and this, too, is manifest from a glance at the map. The advantages the place now affords as a great railroad center, and the position maintained in respect to all the grand trunk lines that pass through the State from the Eastern cities to the Great West, with the thousands of miles of river and steamboat navigation, gives a command of markets for every article which skill or ingenuity may devise, or which may be fashioned by the hands of busy industry, to an extent possessed by few cities of the entire country. With a tardy foresight, yet with a promise of an executive energy that will compensate for all delay, the citizens of Zanesville are now combining the highest skill with the capital at their command, and pushing forward with vigor and energy to secure the advantages their position affords.

*Industries that may be Established.*—That Zanesville is destined to become, at no distant day, a vast manufacturing city, must be manifest to every inquiring and observant mind. Everything combines to bring about this result. The great accumulation of mineral wealth at its doors, more particularly of coal, iron ore and limestone, and the various clays that abound, with its unequalled position, must, in due time, arrest the attention of capitalists from abroad and secure that consideration which such advantages ever command. The three elements necessary to a flourishing and wealthy community are here combined: an agricultural region of vast and varied productiveness—remarkable advantages for the employment of manufacturing capital—and an extensive trade and commerce. Such is the confidence entertained that there is left no room for jealousy, and there is too much honor for detraction. And why should it be otherwise?

With lumber and transportation cheap Zanesville can manufacture at a profit every article of wood work which the house or the farm may require. Whatever of furniture or agricultural implements may be called for or ordered may here be met. It can and should manufacture everything from a chair to a piano, from a hand rake to a reaper, from a wagon to a rail car. With iron mills equal to the resources of the place, Zanesville iron works should rival those of Pittsburg, Sheffield and Birmingham.\* Every kind of tools or machinery, every article of iron or steel, from a shoe-

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\* The Zanesville Furnace, during the year 1873, paid for raw material, delivered, as follows: For limestone for flux, one dollar fifteen cents per ton; for coal for smelting, one dollar seventy-five cents to two dollars per ton; for native iron ore, using three-fourths native ore with one-fourth Lake Superior and Missouri ore, three fifty to five dollars per ton.

tack to a steam engine, from a pick-axe to a locomotive, from the hair spring of a watch to a portable saw mill, from a nail to a Columbiad, should here be fashioned and furnished to meet any required demand. The potters' clay and kaolin that here exists preclude the idea of exhaustion, and how far they may be used to rival Devonshire remains to be determined. All that is required to become famous for crockery and queensware, for earthen and porcelain, is the requisite art, the skillful hands and patient industry, such as Europe furnishes. For these and other industries, numerous and extensive, useful and commanding, whether of economy, of art, of taste or of necessity, where else are the facilities for their production superior? Where equal?

*General Reflections.*—An extensive agricultural community never reaches the highest material prosperity. The wealth of States is largely dependant upon a variety of industries. A diversity of occupations creates a higher social intelligence, a more rapid interchange of ideas among the members of a community, better markets, a quicker circulation of money, greater economy of *materiel* and ampler internal resources. This is illustrated wherever diversity of occupations exist.\* And different kinds of manufactures utilize the various raw materials. In a community where manufactures are numerous and varied no commodity is lost. Every kind of raw material which has a commercial value commands its price and is fabricated into articles which are demanded.

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\* The following extract from a recent publication may be of interest in this connection, and it very well illustrates the idea expressed in the text.

"The Superintendent of the Cambria Iron Works, at Johnstown, Pa., recently communicated to the Commissioner of Internal Revenue some very significant and illustrative statistics.

The quantity of food annually consumed by the population dependant upon the company is :

Beef cattle.....	2,000 head.
Sheep.....	3,000 "
Swine.....	4,000 "
Flour.....	20,000 bbls.

Johnstown furnishes a ready market for all kinds of agricultural products. The supply of butter, eggs, fruits and vegetables, is not equal to the demand. Large quantities are imported from the neighboring markets. Unimproved land within seven miles of the Cambria furnaces is worth from \$150 to \$300 per acre. Similar land lying beyond the influence of the Iron Works, is worth but \$30 per acre. The effect of this manufactory upon the value of real estate is perceptible for fifty miles. In 1864 and 1865, this establishment paid to its employees \$2,995,370. As the earnings of a manual laborer are mostly expended upon the means of living, a large proportion of this great aggregate must have gone into the pockets of the adjacent farmers."

A thousand substances are thus transformed into useful products, and material is utilized which otherwise would be lost. The great arguments of political economy urge here the extension of manufacturing enterprises. The effect becomes apparent. The value of real estate is enhanced, the demand for farm products stimulates the highest capacity of the soil to produce, employment is furnished to thousands of artisans, all raw material is utilized, the labor of production is coined into wealth, the cost of fabrication is paid out at home, the expense of transportation from remote points is avoided, home markets are improved, the golden patronage of neighboring communities is secured, the profits and operations of agriculture and commerce are increased, a knowledge of the arts is diffused, intercourse promoted, ideas exchanged, and material progress advanced. To bring about these results all that is required is a generous liberality at home, a business cunning that looks beyond self, and a wise improvement of the resources at command.

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## CHAPTER V.

### ZANESVILLE AS A COMMERCIAL CITY—RETAIL TRADE—THE JOBBING BUSINESS—COMMERCIAL ADVANTAGES—MATTERS TO BE CONSIDERED.

The next important interest of Zanesville, entitled to consideration, is its trade and commerce, and the position of the place as a commercial center. The advantages the city has in this particular are not inferior in importance to the advantages it possesses as a manufacturing city. Its trade is at this time rapidly increasing. A large extent of territory, densely populated and rich in agricultural resources, through the construction of new lines of railway, has recently been opened up and made tributary to the place. Other new sections, hitherto unknown to Zanesville merchants, will become their most profitable customers. The effect of this is becoming manifest. In the grand rivalry among the cities of the State for commercial power and wealth and securing an industrial population, the chances for Zanesville are daily brightening. The merchants and moneyed men of the place are waking up and beginning to work for the future. Relying hitherto on natural trade and advantages, those who were looked to for the control of its business enterprises slumbered. Now the streets are thronged

daily, merchants from long distances are coming here to lay in their supplies of goods, the business houses present that stirring, active appearance that indicates energy and assures thrift. A larger trade has been had the present spring, in all departments of business, than was ever before known, and every movement indicates that the present stimulus is only the beginning of new, varied and productive enterprises.

*Retail Trade.*—The capital employed in merchandizing in Zanesville is large. The industry is varied. It is a growing one. Every day adds something to what was before established. What yesterday was combined with other branches of business becomes to day a specialty. Each department of trade is conducted as a separate and distinct pursuit. The dry goods business has no connection with the family grocery, the drug and the book trade maintain independent relations, the merchant tailor, the gents' furnishing store, trespasses in no manner upon the trade which the milliner or mantua maker considers her exclusive privilege to monopolize; the jeweler does not come in competition with the hardware dealer, the toy shop is distinct from the china store, and the shoe man finds no competitor in him who deals in fancy goods. Each promotes his own industry in his own way; and the Zanesville merchants have secured a standing for integrity and promptness not second to those of any other city. As a class they are eminently conservative, and "fair dealing" may be set down as their motto. The retail business, in all its most important departments, has grown much beyond the natural support of the community immediately dependant upon the trade of the city for its supplies, because sustained to quite an extent by support received from people residing in neighboring towns and in adjoining counties. Zanesville possesses the monopoly of the retail trade for quite an extent of country; no rival cities are near to share the demand for store supplies, and the facility with which the city can be reached justifies persons from quite a distance coming here to make their purchases. Few other cities of the same population can boast of more elegant and finished store rooms than can here be seen, or larger or better selected stocks of goods than are here maintained. And few cities are better situated to secure a large retail trade in every department than is Zanesville. This is manifest from the dense rural population that must be gathered in its vicinity, the solid character of the surrounding farming community, the dependance upon the place of such a large extent of territory for whatever is needed in the domestic economy or that taste and the requirements of the times demand, and the further fact that it

is so situated that all the mining towns covering quite an extent of territory necessarily look to Zanesville as the place from which all their supplies must be obtained. Hence the retail merchant who establishes himself in Zanesville, if in the possession of business capacity and integrity, need not entertain any fears as to ultimate success. The position of the place to secure trade is really unrivalled, the field for operation extensive, and the present is the golden time to come and occupy.

*The Jobbing Trade.*—The Jobbing business of Zanesville will compare favorably with that of any other city of like population in the entire country. The proprietors of the principal wholesale houses are, for the most part, old citizens of the place, identified with its prosperity, conservative as business men, and on account of their prudence, good judgment and honorable dealing, have secured the confidence of merchants and traders generally throughout South-eastern Ohio. Many of the oldest and most extensive buyers of this section, who in former years were in the habit of visiting the Eastern markets as frequently as twice in each year, have of late found the terms and the quality and extent of the goods of the Zanesville wholesale houses such that their purchases are all made here. Here are found wholesale houses of dry goods, groceries, notions, boots, shoes and leather, hardware, clothing, hats and caps, china and queensware, books and stationery, drugs and medicines, millinery and straw goods, clocks, watches and jewelry, and wall paper and carpet ware rooms. Besides these are numerous retail houses largely engaged in the wholesale business. Country merchants can here find every article necessary for the outfit of a complete variety store, such stores as are generally found throughout the country and in the smaller towns and villages. The capital employed in the wholesale trade is already large, and the opening up of new channels of trade and the rapid development of the resources of this section of Ohio have had the effect to stimulate the capital already employed to increased activity, and invite hither new investments for the prosecution of this business.

*Commercial Advantages.*—That Zanesville possesses great advantages for becoming a commercial city must be manifest upon a little reflection. The advantages it possesses in this particular are not inferior to its advantages as a manufacturing city. Consider, for a moment the position it commands, and

*First, Geographical Position.*—It is situated in the heart of the mineral wealth of the State, on a river that furnishes unlimited water power, and extraordinary facilities for transportation, and

in addition has the choice and the advantage of all the lines here converging for gaining the markets of the country, with its wealth of minerals and its manufactured products. These minerals have hitherto been shut out from market, and closed against capital and industry. The coal that fills the hills of South-eastern Ohio is just coming into demand, and Zanesville is the natural base for supplying as well as distributing this coal to all sections where it is wanted. The coal business is in its infancy. It is destined, at no distant day, to become an immense one, employing more capital in its conduct than any other business which may be prosecuted. It is now attracting and arresting the attention of capitalists, not only of Ohio but of other and distant States, and the effect is becoming apparent in the increased trade and business which always accompany the employment of capital and industry.

*Second, Transportation Facilities.*—The facilities for transportation have been hitherto considered. Still they cannot be dwelt upon too earnestly. In this respect Zanesville is not excelled by the most favored places. Observation and history confirm the statement that all large manufacturing and commercial cities are located on navigable water courses. Cities so located, having also railroad facilities, possess a great advantage over cities in the interior with equal or like railroad facilities. Water courses will always furnish the cheapest road bed for heavy freights, and serve as an equalizer of commercial rates of transportation.

*Third, Territory to be Supplied.*—Zanesville commands the trade of a large extent of territory, a larger extent of territory than any other city of Ohio. Open the map. Observe the position. Almost the entire mineral region of Ohio is directly and immediately tributary to it. Being situated in the heart of this region, and so situated, too, that all rival cities are more remote from even the extremes of this territory than is Zanesville, with such an advantage in respect to business, there is no reason, other things being equal, why it should not secure and hold, substantially, the trade of all this region. When prices are equal, that community or city will sell most which has the advantage of transportation in its favor. And not merely the trade of South-eastern Ohio does it command. Open the map again. See West Virginia bordering Ohio on the South-east. The trade of Zanesville can and does reach over into this State. A large portion of this State, too, its largest half, is nearer Zanesville than any other city. With railroads extending direct from Zanesville to a half dozen different points on the Ohio river, the Western border of this State, with the addition, too, of water communication with its entire North-western border, there is no

reason why a very large proportion of the trade of this State should not come to Zanesville as its natural business center. The lumber of West Virginia, which Zanesville already wants to some extent, and which it will continue to want more and more, and the manufactured wares of various kinds which the people of this State will require from Zanesville, and which can be obtained here cheaper than elsewhere, must have the effect, in due time, to establish an active intercourse and build up a large trade between this city and the different sections of the State. So far as trade is concerned, and business intercourse, there is a homogeneity of interest between South-eastern Ohio and West Virginia.

*Fourth, Extent of Population.*—This mineral region of Ohio, of which Zanesville is the business center, is destined to be the most populous section of the State. It is, in fact, already so. According to the census of 1870, the twenty seven mineral Counties of Ohio contained one-fourth of its entire population. During the last two or three years there has been a rapid increase of population in this section. New towns are coming into existence almost daily, wherever the mining interests are developing. And this is only the beginning. Marvelous changes are already taking place, and still more marvelous ones remain to be disclosed. And all this population must look to Zanesville for its supplies. What must be its effect upon the future of the city?

*Fifth, Wealth of this Section.*—As this mineral section is destined to be the most populous, so also is it to become the wealthiest section of the State. This is manifest. The furnaces, the rolling mills, the rail mills, the locomotive works, the nail mills, the machine shops, all require capital in their establishment and prosecution, and all accumulate capital to a larger extent than any other industries. That such establishments will, in a very few years, be found scattered through this entire mineral region is as certain as that the raw material they grow upon here exists. Why not? The ore, the coal, the limestone, the productive soil and consequently cheap living, the transportation, all, all, are here and here abound. Why, therefore, should not this, according to territory, be the wealthiest section of Ohio, and Zanesville its wealthiest city, among the wealthiest in the West? Indeed the richest portion of this mineral region, that which contains the ore and the coal to the greatest extent, is so near as to become, practically, a suburb of Zanesville. The great coal fields of Perry County, the greatest in the West, probably the greatest in the United States, if not in the world, are within twenty miles of Zanesville, and a down grade the entire distance until near the corporation line of Zanesville. There is

no other city that is not situated more than twice this distance from the coal fields, and the grade is against every one. Such facts need no comment.

*Sixth, Agriculture of the Mining Region.*—The surface of the entire region of South-eastern Ohio, the character of its soil, the extent and variety of its products, the mixed husbandry that prevails, the farming population, are all very similar to what has been said in these respects of Muskingum County in the former part of this pamphlet. What is true of this immediate section is true of the entire region. This has much to do in determining the future of the city which is the business centre of the region and which furnishes its supplies.

*Seventh, A Manufacturing Necessarily a Commercial City.*—The first essential want of any productive community is markets, where to dispose of the surplus products that may be created at profitable prices, be these products mechanical or agricultural. Markets are a want of population in all lands. Population adds value to lands and property of every kind, and is, therefore, one of the principal sources and causes of wealth, because it creates a market by causing a demand for property and products; it enhances their price and value, rewards the producer for his industry, and encourages and increases industry and production. Population thus creates markets, and where the two great producers of wealth, agriculture and manufactures, are so nearly allied as here, where they both exist in the same community, or within the same region of territory, that population will vary according as these interests multiply and grow. Having the manufacturing and agricultural facilities here to such an extent as has hitherto been shown, it follows that the trade and commerce of the place should exist in a like corresponding extent. The wants of a people are mutual, they are complementary. The country needs the production of the manufacturing city, and the city needs the supplies the country affords. Thus trade is built up, commerce extended and prosperity and wealth secured.

*Eighth, Mining Companies.*—A large extent of territory situated South from Zanesville, comprising the South-western part of Muskingum County, the South half of Perry, a large part of Hocking and Athens and the Western portion of Morgan Counties, is now attracting the attention of capitalists of distant sections and States, with the view of opening up and developing the minerals of this section. Numerous Mining Companies have already been organized, some with an authorized capital running into millions, and quite a number are already at work, operating where railroad



## APPENDIX.

A change having recently been made in the mode of administering the McIntire school fund alluded to on page 28, of which the writer was ignorant at the time the foregoing pages were printed, one of the Trustees of said fund has presented the following statement of the manner in which this fund is now made available to meet the purposes of the bequest.

“The McIntire Estate is vested in the Zanesville Canal and Manufacturing Company as trustee, under the will of John McIntire, and is managed by the Directors of said company.

The schools north of Main Street, Zanesville, and East of the river are named respectively ‘McIntire School, No. 1, No. 2,’ etc. Pursuant to a contract, authorized by statute, between said Directors and the Board of Education, said Directors have certain powers and control over said schools, and the teachers therein, and furnish a specific sum towards their support. Said Estate also furnishes the main support of the McIntire Children’s Home, and supplies books and clothing in cases where the terms of the will and the law permit.”

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NOTE.—Owing to the haste in which the foregoing pages have passed through the press, a number of errors, typographical and in the use of words, have occurred. Such errors, however, the reader will be able to detect, and it has been deemed unnecessary to make the corrections here.